

REMARKS

Amendments to claims 1, 8, 11, 18, 25, 28, 35, 40, 43, and 48-50 are for the purpose of clarifying what Applicant regards as the invention. Support for the amendments to claims 1, 8, 11, 18, 25, and 28 can be found at least in paragraphs 26-28 of the specification, which discloses an embodiment where an input image is generated using an imaging system (e.g., a fluoroscopic system), and therefore, is not generated by performing a weighted subtraction of another image. Amendments to claims 35, 40, and 43 are to correct grammatical errors. No new matter has been added.

I. CLAIM REJECTIONS UNDER 35 U.S.C. § 102

Horiba

Claims 1-4, 6-14, 16-21, 23-31, and 33-53 stand rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,672,651 (Horiba). Applicant respectfully notes that in order to sustain a rejection under §102, each element in the rejected claim must be found, either expressly or inherently, in the cited reference.

Claims 1, 8, and 11 recite collecting a third x-ray image, *wherein at least a portion of the first x-ray image and at least a portion of the third x-ray image comprise images of a same portion of an object* (Emphasis Added). Claims 18, 25, 28, 35, 40, and 43 recite similar limitations. Horiba does not disclose or suggest such limitation. Rather, Horiba discloses obtaining mask images and live images (column 5, lines 33-66). However, there is nothing in Horiba that discloses or suggests that one of the mask images and the live image comprise images of a same portion of an object. For at least the foregoing reason, claims 1, 8, 11, 18, 25, 28, 35, 40, and 43, and their respective dependent claims, are believed allowable over Horiba.

Claims 1, 8, and 11 also recite enhancing a feature in the third x-ray image by adjusting the third x-ray image based on the composite image. Claims 18, 25, and 28 recite similar limitations. Horiba also does not disclose or suggest such limitation. Rather, Horiba discloses adjusting a live image based on a mask image (i.e., not the “averaged image” (which is obtained

using mask images) described in column 5, line 39.) (See column 5, lines 57-59, which states, “In the image processor unit 11, the *mask image* stored already in the first frame memory 14 is subtracted from each of the live images.”). For this additional reason, claims 1, 8, 11, 18, 25, and 28, and their respective dependent claims, are believed allowable over Horiba.

Dependent claim 54 recites that the portion of the object does not comprise a contrast media when the third x-ray image is collected. Dependent claims 56, 58, 60, 62, and 64 recite similar limitations. Horiba also does not disclose or suggest such limitation. Rather, the live images disclosed in Horiba are obtained when the object (e.g., the patient 5) has been injected with a contrast media (column 5, lines 42-50). For this additional reason, dependent claims 54, 56, 58, 60, 62, and 64 are believed allowable over Horiba.

Dependent claim 55 recites generating the first x-ray image and the second x-ray image using x-ray having a same energy level. Dependent claims 57, 59, 61, 63, and 65 recite similar limitations. Horiba also does not disclose or suggest such limitation. For this additional reason, dependent claims 55, 57, 59, 61, 63, and 65 are believed allowable over Horiba.

Takeo

Claims 1-3, 7-8, 10-13, 17-20, 24-25, 27-30, 34-37, 40, 43-45, and 48-53 stand rejected under 35 U.S. C. 102(b) as being anticipated by U.S. Patent No. 6,125,166 (Takeo).

Claim 1 recites that the third x-ray image is collected without performing a weighted subtraction of the first x-ray image. Claims 8 and 11 recite similar limitations. Claim 18 recites that the input x-ray image is collected without performing a weighted subtraction of the one or more x-ray images. Claims 25 and 28 recite similar limitations. Takeo does not disclose or suggest the above limitations. Rather, Takeo discloses obtaining a third image 61 by performing a weighted subtraction of a first image 41 (column 18, lines 11-20 and 56-65). For at least the foregoing reason, claims 1, 8, 11, 18, 25, and 28, and their respective dependent claims, are believed allowable over Takeo.

Claim 35 recites that the first and the second x-ray images are obtained using x-ray having a same energy level. Claims 40 and 43 recite similar limitations. Takeo does not disclose or suggest the above limitations. Rather, Takeo discloses obtaining a first X-ray image 41 using low energy X-rays, and a second X-ray image 42 using high energy X-ray (column 12, lines 5-8). For at least the foregoing reason, claims 35, 40, and 43, and their respective dependent claims, are believed allowable over Takeo.

II. CLAIM REJECTIONS UNDER 35 U.S.C. § 103

Claims 5, 15, 22, and 32 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Horiba in view of U.S. Patent No. 6,546,124 (Hopple). The § 103 rejection has been rendered moot in view of the above remarks presented with respect to the independent claims.

III. INFORMATION DISCLOSURE STATEMENT

Applicant submitted a Supplemental Information Disclosure Statement on March 22, 2005. However, reference number 1, "International Search Report and Written Opinion dated February 15, 2005 for PCT/US2004/029277", listed on corresponding form PTO/SB/08b, has not yet been initialed. Applicant hereby respectfully requests that the reference be considered and initialed by the Examiner. Attached hereto is a copy of form PTO/SB/08b.

CONCLUSION


Based on the foregoing, all remaining claims are believed in condition for allowance. If the Examiner has any questions or comments regarding this amendment, please contact the undersigned at the number listed below.

The Commissioner is authorized to charge any fees due in connection with the filing of this document to Bingham McCutchen's Deposit Account No. 50-2518, referencing billing number 7031422003. The Commissioner is authorized to credit any overpayment or to charge any underpayment to Bingham McCutchen's Deposit Account No. 50-2518, referencing billing number 7031422003.

Respectfully submitted,
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Dated: December 27, 2005

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